What is claimed is:

1. ~~A method for forming a drill bit body, comprising:~~

infiltrating powdered tungsten carbide with a binder alloy in a mold, the mold having therein at least one displacement adapted to form a mounting pad for a cutting element, the displacement comprising a substantially cylindrical body having a diameter selected to substantially conform to a radius of the cutting element and a projection adapted to form a relief groove under a position of a diamond table in the cutting element when the cutting element is mounted on the pad, a width of the relief groove selected so that the relief groove extends back from an outer surface of the bit body at least about 40 percent of that portion of a thickness of the diamond table which does not extend past the outer surface.

2. The method as defined in claim 1 wherein the cutting element comprises a tungsten carbide substrate, the substrate brazed to the mounting pad.

3. The method as defined in claim 1 wherein the at least one displacement comprises a castable material formed into a single body.

4. The method as defined in claim 1 wherein the projection extends past an external surface of the displacement by about 0.025inches.

5. A drill bit body comprising:

a main body having at least one blade formed therein; and

at least one cutting element mounting pad formed on the at least one blade, the mounting pad adapted to receive therein a substrate of a cutting element, the mounting pad having a relief groove therein under a position of a diamond table in the cutting element when the cutting element is mounted on the pad, a width of the relief groove selected so that the relief groove extends back from an outer surface of the blade at least about 40 percent of that portion of a thickness of the diamond table which does not extend past the outer surface.

6. The drill bit body as defined in claim 5, wherein the bit body is formed from powdered tungsten carbide infiltrated by a binder alloy.

7. The drill bit body as defined in claim 5 wherein the relief groove has a depth of 0.025 inches.

8. A drill bit comprising:

a bit body having a plurality of blades formed therein; and

a plurality of cutting elements mounted on each of the blades, each cutting element mounted on a cutting element mounting pad formed on one of the blades, the mounting pad adapted to receive therein a substrate of the cutting element, the mounting pad having a relief groove therein under a position of a diamond table in the cutting element when the cutting element is mounted on the pad, a width of the relief groove selected so that the relief groove extends back from an outer surface of the blade at least about 40 percent of that portion of a thickness of the diamond table which does not extend past the outer surface.

9. The drill bit as defined in claim 8 wherein the bit body comprises powdered tungsten carbide infiltrated with a binder alloy.

10. The drill bit as defined in claim 8 wherein each of the relief grooves has a depth of about 0.025 inches.

11. A drill bit body comprising:

a main body having at least one blade formed therein; and

at least one cutting element mounting pad formed on the at least one blade, the mounting pad adapted to receive therein a substrate of a cutting element, the mounting pad having a relief groove therein under a position of a diamond table in the cutting element when the cutting element is mounted on the pad, the drill bit body formed by machining a bit body blank.

12. A method for forming a drill bit body, comprising:

infiltrating powdered tungsten carbide with a binder alloy in a mold, the mold having therein at least one displacement adapted to form a mounting pad for a cutting element, the displacement being made from a single component comprising a substantially cylindrical body having a diameter selected to substantially conform to a radius of the cutting element and a projection adapted to form a relief groove under a position of a diamond table in the cutting element when the cutting element is mounted on the pad.

13. The method as defined in claim 12 wherein the relief groove has a depth of about 0.025 inches.

14. The method as defined in claim 12 wherein the relief groove extends back from an outer surface of the blade at least about 40 percent of that portion of a thickness of the diamond table which does not extend past the outer surface.